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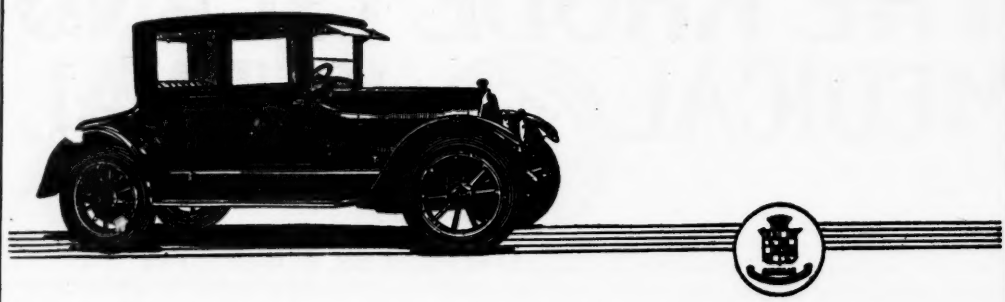

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The

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ORIGINAL ARTICLES

INTRODUCTORY REMARKS ON FOCAL RELATION TO CHRONIC DEAFNESS.

By Francis P. Emerson, M. D.
Boston, Mass.

I feel very much honored in being able to talk to you to-night and in the very good attendance for so early in the season, which I take to mean that either you are a very courteous society or my subject may have some interest to you all, although its application is to a special department of medicine.

I want to say something, in opening, on the general subject of focal infections and then try to apply this to the question of deafness. Deafness is a subject upon which we are not agreed, either in its pathology or treatment, but one in which, during the last few years, there has been a broad interest and great advance in relieving a condition of such importance to the community.

In a normal throat there are several varieties of bacteria, among the more important of which are the streptococci, pneumococci, Pfeiffer's bacilli, staphylococci, meningococci, diphtheria and diphtheroids. Possibly, the viruses natural or modified in measles, scarlet fever, anterior poliomyelitis, and lethargic encephalitis. In the streptococcus group are certain strains constantly found in the tonsils or throat ordinarily doing no harm. At times, however, they take advantage of conditions in the host and invade the tissues, causing local or general infection. The altered conditions making infection possible are chiefly in the host. (D. J. Davis, M. D., Pathological Department, University of Illinois.) These bacterial conditions in which the resistance of the host is lowered may be followed by such general systemic conditions as nephritis, endocarditis, arthritis, etc.

The aurist and rhinologist see for the most part in their office chronic diseases. The histories which the writer has taken during the last ten years have brought out certain facts which tend to show that the primary infection in the early beginning of the focal process was the result of measles, scarlet fever, influenza or diphtheria. Following this primary infection the patient, over a number of years, might show a variety of diseased conditions which might depend upon the activity of the organism causing the primary trouble. This is a very important phase of focal infections. Do we have repeated acute infections in tissue which is undergoing retrograde changes, or do we have a chronic infection which is present in the host over a long number of years and where lowered resistance is followed by an acute exacerbation? The latter I believe to be the case. If so, then on examination to-day of a patient who comes in complaining of the results which may follow a localized infection, it is necessary, on account of the secondary foci that have resulted, to cover quite a little more ground than formerly. We examine the nose, and note the conditions of the mucous membrane, transilluminate the sinuses, examine the vault of the pharynx, the condition of the tonsils and teeth, and later confirm this examination by an X-ray of the sinuses and films of all suspected teeth. The two most common foci, in our experience, that have resulted in the disaster of the patient are the conditions of the teeth and submerged tonsils., There was, at one time, among the dentists, great enthusiasm in regard to the relation of apical abscesses to rheumatism. This has somewhat subsided because they found that all cases of rheumatism were not cured by extraction of teeth and the healing of these necrosed areas. It is not sufficient for us to look after these diseased teeth but the chronic infection must be cleared up in the throat, and it is necessary that you see the films of these teeth yourself and know that they are looked after by a dentist who will coöperate with you in relieving foci of infection, even if the teeth have to be extracted.

THE MINOR ROLE OF THE CONDUCTION APPARATUS IN SLOWLY PROGRESSIVE DEAFNESS.*

Francis P. Emerson, M. D.,
Boston, Mass.

The function and relative importance of the conduction apparatus, given a normal end organ and normal hearing, is well under-

*Read before the Providence Medical Association, October 4, 1920.

stood. The physics of sound production, transmission and perception in health obey definite laws that are accepted by all aurists in principle, if not in detail. The object of this paper is to ask your consideration to the relation of the conduction apparatus to certain pathological conditions that have resulted in, or are causing, deafness.

Our present conception of the etiology of non-suppurative deafness has been influenced by the gradual differentiation of the function of the perception and conduction apparatus. Among the many questions that could not logically be explained by attributing to the conduction apparatus the cause for the progressive loss of hearing through interference with the sound waves, was the difficulty in accounting for the upper part of the scale *always* being lost first. This was usually accompanied by tinnitus, that is labyrinthine irritation. Again, in progressive deafness there was a tendency for the hearing test to become equal, until by the time the low limits had been raised to about 512C.[2] the Rinné and low limits would not vary even a few seconds for the two sides. It was not conceivable that the pathology of the Eustachian tube and middle ear could result in equal loss of function in so many cases. Third, when suppuration had resulted in the destruction of the membrana propria, with necrosis and sloughing of the malleus and incus, it was observed that in many cases the hearing was exceptionally good, especially if the process was of the fulminating type. At times, even sound perception might be painfully acute, although the conduction apparatus was disorganized. This leaves only the stapes. Is this indispensable to normal hearing? If we have an immovable stapes with a normal end organ, even this condition if it were possible would not preclude fairly good hearing for the spoken voice. When the stapes becomes fixed in the oval window, as the result of fibrous bands formed during the course of a chronic non-suppurative otitis media, the perception apparatus has been functionally impaired long before the stapes loses its mobility. When fixation of the stapes is accompanied by profound deafness there is also an associated perception deafness that is more important than the condition of the oval window. It is then outside the conduction apparatus that we must look for the real cause in progressive loss of hearing. In the experience of the writer there is no such thing as a pure conduction deafness. In every case of deafness, in whatever category you may classify it, there is diminished tone perception from the beginning. It is this impairment of tone perception that is the important problem in any attempt to arrest or restore lost hearing. Lastly, it is common knowledge that nerve deafness frequently follows acute and chronic systemic poisons and that certain drugs in full dosage have a disastrous effect on the organ of Corti. These findings make it necessary to reconstruct our otologic concept to conform to the newer pathology, or, as so often happens, confirm our clinical findings but explain the etiology in accordance with our recent views. It is true that certain types of infection show inflammatory reaction that in one case is confined to the mucous membrane, in another to the fibrous tissue and in still others to the osseous elements as end results. These manifestations of involvement of the middle ear are of secondary importance, however, as compared to the question of damage temporary or permanent to the end organ. Let us take the nomenclature of the last International Congress and try and interpret it along these lines. In the child obstructed with adenoids. or in the adult with tubo-tympanic catarrh, the deafness is not due so much to the closure of the Eustachian tube and the interference with the conduction apparatus as such, but rather that the closure of the tube is followed by absorption of air in the middle ear, indrawing of the membrana tympani, impaction of the stapes in the oval window and labyrinthine disturbance. This is accompanied by tinnitus and a loss of tone perception in the upper part of the scale which is functional for a time, but is ultimately followed by nerve degeneration. To be sure, in a child with adenoids, the low tone limit may be raised temporarily. This becomes normal, however, as the Eustachian tube opens, but the loss in the upper tone limit continues if the loss of hearing is progressive. When, there-

fore, in a case of chronic catarrhal otitis media the low limits are again raised, the upper limits have been markedly cut down. This would indicate that the progress of chronic deafness was not because of increasing obstruction in the middle ear, but because of further impairment of tone perception.

In those cases of (O.M.C.C.) chronic tubotympanic catarrh we find not only that the upper tone limits were lost first, but that where the course has extended over a number of years there may be also areas of tone deafness with the lower limits unchanged. These findings are accompanied by a ground glass appearance of the membrana tympani, loss of the light reflex and indrawing. Where the changes in the membrana tympani were characteristic, there was no question as to diagnosis. There was a type of case, however, that did not show changes in the membrana tympani and where we were accustomed to find a clean nasopharynx. These cases were classified as catarrhal adhesive otitis media, or, if the deafness was pronounced with changes in the bone conduction, they were called by some, beginning otosclerosis. It was not uncommon to find typical changes on one side and a clear membrana tympani on the opposite side and yet the hearing, after a number of years, might be almost identical. This type of case, whether atypical chronic catarrhal otitis media or not, begins with loss of the upper tone limits and tinnitus. There may or may not be areas of tone deafness. As the disease progresses the hearing gradually tends to become the same on both sides, the tinnitus becomes more high pitched and there may or may not be vertigo. The progress of the disease is not, in the judgment of the writer, influenced very much by the changes in the conduction apparatus. The primary step is a closure of the tube causing intralabyrinthine changes in the perception apparatus and a raising temporarily of the low limit. The process in the Eustachian tube may then run its course and yet the deafness goes on, influenced by the acute exacerbations of a toxic focus, i.e., after the deafness is once established it is progressive not because of increasing mechanical obstruction from adhesions, tissue thickening or bony deposits in the conduction apparatus, but because of loss of tone perception from damage to the end organ, from the reaction to a definite chronic infection. That the upper conversational limit is first impaired has been confirmed by the audiometer of Dr. Dean.

Silent areas occur so often in non suppurative otitis media that the hearing test may be misleading. If we happen to test our bone conduction with a fork corresponding to the silent area it would, of course, not be heard or be transmitted to the other side. Even an approximately correct conclusion in regard to hearing cannot be reached without using all the forks from 96A. to 2048C.[4], nor without several tests by the same observer in a given case. As before stated, the upper part of the scale is lost first, and, as we would expect, both air and bone conduction are lowered for certain forks unless there is a concurrent middle ear, for sound waves, produced by the striking of a given fork, are registered in the same part of the perception apparatus, whether passing through a media of air or bone. It follows, then, that with no obstruction in the middle ear any lowering of bone conduction must be accompanied by a lowering of air conduction for the same fork. On the other hand, any obstruction in the middle ear would raise the bone conduction and lower the air conduction for forks below 512C.[2]. The higher the fork required to register a lowering of bone conduction the better the prognosis (Miss C. G.). The hearing test alone with all the forks is the only guide in estimating the remaining function in any given case of deafness. This is only a help, for no hearing test and no aural examination now known can tell us whether nerve degeneration has actually commenced. The evidence increases that while we may have pure nerve deafness, we never have pure conduction deafness; the fact that some nerve impairment exists in every case of deafness was not recognized, as in the usual tests we rarely resorted to all the forks. The loss of the upper register, whose lower limit is roughly indicated by the whispered voice, is then prima facie evidence that the deafness is due to damage to the end organ.

Inspection of the membrana tympani gives us no information as to the function of hearing, neither does it enable us to form any conception as to whether we can hold out any hope for the future. The immobility of the membrana tympani, malleus or incus, areas of atrophy, or even the absence of the membrana propria, do not justify a gloomy prognosis nor give much information that is helpful to the patient. These are end results and unless we have some definite pathology that explains the different steps that have led up to this condition and can determine whether the cause is still active, we are not in a position to do the patient any good.

Etiology. From the experience of the writer the primary infection, so far as the deafness is concerned, is usually in the lymphoid tissue. In children, primarily, in tonsil and adenoid infection. In adults, without regard to age limit, usually in the tonsils, especially the supratonsillar fossa, with secondary involvement of the surrounding lymphoid tissues, especially in the pharynx. These foci date back to the infectious diseases and are subject to repeated exacerbations. Even when there is obvious sinusitis or bony necrosis in the mandible, in the majority of cases there had been a preceding chronic infection in Waldeyer's ring, which apparently started in the tonsil. The lymphatic connection between the supratonsillar fossa and the middle ear is direct, and there is usually a history of sore throats as a child but none of late years.

Prognosis. The writer is willing to admit that he does not know from the first examination whether an advanced case will improve or not. It all depends on the amount of damage to the perception apparatus. The membrance tympani, malleus and incus may be gone and the promontory bare, and yet if this was the result of a sudden explosion of a virulent infection the nerve function would be but little impaired. On the other hand, the membrana tympani may appear almost normal with a progressive secondary nerve atrophy so far advanced that the case is beyond help. It is rarely the case that one ear (usually the one last infected) does not improve. We have much to learn in the treatment of those cases where nerve degeneration has actually commenced. After the cause has been removed, whether we can, in these advanced cases, reclaim any lost function by auditory re-education, electricity, the use of strychnine, etc., is still an open question. The removal of toxic foci thoroughly must always be an individual equation. The war experience has taught us that much can be done by perseverence in restoring lost function. In the judgment of the writer no department of otology offers so much encouragement or so large a field of usefulness as the treatment of slowly progressive deafness.

Treatment. Treatment of the Eustachian tubes, either by bougies or inflation through a septic field, is never justifiable as a routine and never does any good in chronic cases. It can readily be understood that anything causing a secondary pharyngitis would have a bad effect on the hearing. As a matter of fact, the writer has never seen marked improvement in hearing in chronic deafness from any treatment that did not include freeing the supra-tonsillar fossa of infected tissue, whether this be in patients of ten or sixty-five years of age. Do not try to increase the mobility of the ossicles or pay any attention to the conduction apparatus except to free it of infection. Remember that toxic products are being constantly thrown into the circulation and that the perception apparatus suffers first from toxemia and then from nerve degeneration. In a certain number of cases the writer believes that after all sources of re-infection have been removed, that much can be done by re-education of the perception centers. That is, the central end organ does not seem to interpret the sound waves on account of functional disuse. On the other hand, it looks as though a highly specialized nerve, like the nerve of hearing, when degeneration has commenced, was uninfluenced by treatment. Experience has shown that very many cases given up as hopelss, on account of nerve degeneration, were only functionally crippled. These cases will improve and stay improved with no other treatment than removal of the cause of the deafness. More-

over, these cases are not unusual, for it is the exception if one ear or the other does not gain if the low tone limit is still unchanged.

B. O. M. C. C.

S. S.—Eight years. School. December 27, 1919. P. H.—T and A operation at Massachusetts General Hospital three years ago. Measles two months ago and since then she has been deaf with ringing in both ears. EXAMINATION—Ears: A. D., membrana tympani indrawn. Dull. No thickening. A. S., membrana tympani indrawn. Light reflex present but not clear. Pharynx—Epipharynx blocked by a large adenoid. Sinuses—Transillumination clear except over ethmoids. DIAGNOSIS—Infective O. M. C. C. TREATMENT—Adenoid removed under gas. February 14, 1920—Has had a cold for two weeks. RESULT—This case improved in hearing distance twenty-three feet without politzerization or any direct treatment of the ears. The noises still continue.

Terminal stage in a case of slowly progressive loss of hearing extending over twenty years. Mrs. R.—Fifty-two years. Married. P. H.—Always well. No history of acute infections. Under constant treatment directed especially to the tubes by a competent aurist. No history of vertigo or tinnitus. A. U.—Ground glass appearance. L. R. gone. No areas of atrophy or thickening. No stapes fixation. EXAMINATION — Transillumination negative. No pus in nares. M. M. normal. Septum straight. Breathing free. No infection. Pharynx—Lateral pharyngitis marked but whole pharynx shows a low-grade pharyngitis. Tonsils—Cryptic tonsillar disease and muco-pus in both. Pharyngeal secretions changed and patient gets up every morning to clear her throat and sometimes during the night. P. S.—The chronic focal infection in the tonsil, low-grade pharyngitis and infection of the lymphoid tissue in the mouth of the tube followed by deafness, would seem obvious.

Fulminating case with great damage to middle ears. Marked improvement in hearing (without inflation), because the perception apparatus was not injured sufficiently to be followed by nerve degeneration. Miss C. G.—Twenty-eight years. Born Sweden. Single. Salesgirl. P. H.—Measles four years. Aural discharge from both ears until fifteen years old. Then T and A operation and ears were dry until six months ago. Has colds every winter with swellings under jaws and soreness back of ears. No general illness since the measles but does not feel strong. EXAMINATION—A. S., O. M. S. Ch. A. D., Eff. O. M. S. Ears examined by Dr. C. T. P. Considerable tonsil tissue in supra-tonsillar fossae containing muco-pus. Transillumination negative. Band passing from left eustachian tube to posterior pharyngeal wall. Low-grade pharyngitis. A. S.—Directly ahead promontory is covered with granulations of watery pink color. The membrana tympani is entirely absent in the posterior half. Posteriorly can be seen niche of round window. Anteriorly and above remains of malleus. Shrapnel's membrane is covered with grayish membrane. Slight discharge. DIAGNOSIS—O. M. S. Ch. A. D.—Dry. Horse-shoe shaped perforation involving entire portion of membrana tympani up to anterior and posterior ligament. Malleus intact with lower and tied down to promontory by band of adhesions. Underneath posterior superior border of perforation can be seen incudo-stapedial joint. Along posterior border of perforation can be seen niche of round window. Promontory is covered by mucus membrane. Tinnitus like steam. DIAGNOSIS—Eff. O. M. S. TREATMENT—Tonsillectomy at Massachusetts Charitable Eye and Ear Infirmary, October 31, 1919.

RESULT—In this case the conduction apparatus, if compared to a chain, has two or three links missing in its most vital part. The left ear still has a scanty discharge. The patient has had active ear involvement from childhood until twenty-eight years old, and yet the right ear gained twenty-five feet in four months and the left nineteen feet. No inflation at any time. After removal of the tonsils the accompanying infection in the pharynx and tube was treated as long as improvement continued.

B. O. M. C. C. (Infective.)

September 27, 1919. Miss H. A.—Twenty-three years. In college. Home, California. P. H.—For six to eight years catarrhal colds. Last year throat infections. T and A two years ago. Rheumatism in arms and shoulders at fourteen years. Measles at seven years. Four years ago A. D. commenced to be deaf. A. S.,

one year later. No tinnitus or vertigo. Think hearing is not so good as one year ago. EXAMINATION—A. D., Membrana tympani dull and indrawn. L. R., broken. A. S., membrana tympani indrawn. L. R., faint. No area of atrophy or thickening. Palate pale. TREATMENT—Infection cleared up. No *inflation* or any direct treatment of the ears. RESULT—From the first test one would hardly have expected the hearing to return to almost normal. The whispered voice improved from *three feet to twenty-five feet.* The tonsils were removed two years ago but apparently she had no after treatment for the epipharyngitis and tubes.

Miss A. M. C.—November 26, 1919. Single. Thirty-eight years. P. H.—Puffing tinnitus in right ear for seven years. Much worse for last two or three years. Slight vertigo. No history of aural discharge. Deafness has gradually developed. Has had an impacted molar removed. Tonsils and adenoid operation, also had tonsillar crypts burned with cautery recently. Duration of deafness uncertain. EXAMINATION—A. D., O. M. C. C. M. T., dull, indrawn. L. R., broken. A. S., O. M. C. C. M. T., dull, indrawn. L. R., broken. X-ray of sinuses shows slight increase in density over the right antrum. The left ethmoid cells are hazy. Teeth negative. Throat—Low-grade pharyngitis. Tonsil remains, especially in upper part of fossa. Muco-pus present. OPERATION—December 30, 1919. Fenway Hospital. Tonsillectomy. Right antrum found negative. RESULT—In the right ear the lower limit was reduced from 512 to 256. The left ear gained twenty-one feet for the whispered voice and the low limit was reduced from 128 to ninety-six.

N. H. B.—Forty-two years. Mill superintendent, Maine. January 22, 1920. P. H.—Weight 210 pounds. Nose broken when a child and deflected to the right. Deformity includes the bony framework. Deviation of septum to right occludes that side completely. Any nasal irritation is now followed by lacrimation, anterior nasal discharge and redness of the nose accompanied by sneezing. Sleeps with his head raised and cannot stand much cold air. Has been growing deaf for seven years. Cannot hear his watch in the right ear by air conduction. Does not consider that his right ear is of any use in conversation. Two sisters are deaf. No general illness. EXAMINATION—A. D., Membrana tympani dull and indrawn. L. R., broken and faint. A. S., membrana tympani indrawn. L. R., faint. No areas of thickening or atrophy. A. U., stapes movable. TREATMENT—January 31, 1920, operation at Brooks Hospital: (1) Submucous resection of septum. (2) Refracture of nasal bones and correction of external deformity. (3) Tonsillectomy. RESULT—In twenty-five days the hearing for the whispered voice in the *right* ear (which he considered of no use to him for conversation) had gained twenty-five feet and the low limit had changed from 512 to 256. The left ear had improved three feet. No inflation used.

CONCLUSIONS. 1. There is always a nerve element in every case of so-called conduction deafness of the progressive type.

2. The prognosis in regard to restoration of hearing is dependent upon the perception and not upon the conduction apparatus.

3. Toxic deafness and that due to beginning nerve degeneration cannot be differentiated by any aural examination.

4. Silent areas or islands of deafness are quite common in O. M. C. C.

5. The etiological factor is usually active in the lymphoid tissue as a chronic infection with acute exacerbations.

6. In some cases of long-standing deafness it would seem necessary to re-educate the central perception centers by exercises, after all sources of infection have been eliminated.

DISCUSSION OF DR. EMERSON'S PAPER.

DR. N. DARRELL HARVEY, Providence, R. I.—I think this paper of Dr. Emerson's is a particularly timely one and just such a paper as should be read before a body like the present one. It also has a great deal of substance in it for otologists, but the whole subject, of the etiology and the cure of chronic deafness, is one which not only the medical profession in this community but the whole community should take cognizance of.

We have three classes of deafness—the hard of hearing, the moderately deaf and the deaf mute. These individuals have not received the attention from the medical profession nor from the community in which they live as they should have. A great deal of good work is being done throughout the

country in the way of bringing before the medical profession the chief causes of deafness, the treatment of cases of hard of hearing, and the re-education of the deaf mute.

Dr. Emerson has told us a good deal tonight, and advanced the theory about which I have thought a good many years, ever since I heard his first paper. The whole subject of focal infections in regard to the ear is something we all should thoroughly consider. No examination of the upper ear passage is complete without a thorough examination of the ears. When we have thoroughly established a pathological condition of the tonsil, of course the earliest surgical treatment should be adopted. No examination of the tonsil can be thoroughly made without what is called the "milking process."

Dr. Emerson has not said anything about sinus trouble but they come under the same head of focal infections. I believe that a great many conditions of the tonsils and adenoids which we see in children and adults are influenced by the inflammation of the sinuses. Very often by clearing up these acute conditions of the sinuses and nose we can do a great deal in conditions not necessitating the removal of the tonsils and adenoids of the patient. The whole picture of chronic deafness should be forcibly placed before the minds of the laity.

I think that, while otologists are doing all they can in this direction, it lies within the power of the medical profession to advise their patients in regard to the importance of the earliest possible treatment for beginning deafness.

Dr. Harlan P. Abbott, Providence, R. I.— I feel that we have been very fortunate tonight in having Dr. Emerson with us. He has been willing to come down here and read this paper for our instruction.

I feel that there is a good deal of valuable material for thought and for working out. I think that we have all felt in our work the importance of infections as a constant element in ear troubles, in deafness, in ear infections and ear nerve infections and that in a great many of our cases, in the history, we find that sometime during the course of the patient's life there has been a decided infection. It may have been scarlet fever, measles, typhoid or some luetic infection which has been the origin of the trouble. To me it is a very valuable thought that Dr. Emerson has brought out the importance of the continuation of these infections after the main poison has passed away. The infected area, which is not particularly apparent, but which is still pronounced, exacerbates at one time and another. It is in these cases where there is very little to show on the surface that it is necessary to dig out the exact focus from which the infection, absorption and destruction to nerve function takes place. In other words, it is a matter of preventive medicine and surgery. The treatment of the ear after the injury has taken place is the question in which I feel that Dr. Emerson recognized the leading men of the country would differ as to the treatment to overcome the results of this infection after the infected areas have been removed. That element of discussion I will leave to my associates, who can handle it better than I.

Dr. F. Nolton Bigelow, Providence, R. I.— According to my first teaching, the proper treatment for chronic catarrhal deafness was inflation from one to three times a week, continued more or less indefinitely. We were taught that even though this treatment did not appreciably help the hearing, it would prevent the hearing from getting worse. In practice, I found on checking up by repeated hearing tests, that in a certain number of cases the hearing grew worse faster under treatment than it would have without any treatment. In other words, the treatment was doing more harm than good. However, this does not apply to all cases. Dr. Emerson has brought forward something which all of us can apply, otologists and general practitioners as well. It is up to the general practitioner especially, as he usually sees the patient first, to eliminate all sources of focal infection. When these sources have been removed, there is something else that may benefit the patient, namely, re-education. When their hearing becomes impaired, many people simply give up trying to hear, and we have an atrophy of disuse added to the original trouble. It is very important that these people be encouraged to use their ears as much as possible in their every day life. In addition, give them some definite exercise to do every day. A good exercise is to have the patient listen to a loud ticking clock and then move away from the sound till he has to "strain" his ears in order to hear it. Better still, is to have a friend read or talk while the patient is far enough away so he has to make a decided effort to hear. To accomplish anything, these exercises must be practiced daily and not over ten or fifteen minutes at a time.

I think with Dr. Emerson that a focus of infection is a definite thing, that is to say it is a pus infection in the tonsils, teeth or somewhere. Deviations of the septum, spurs and the like, by obstructing the drainage of the sinuses, may lead to infection, but are not of themselves foci of infection. Dr. Emerson's experience, as shown by his case

reports, has been so striking that he rather decries treatment of the ear direct.

There are a certain number of cases of chronic deafness that are benefited by the usual ear treatment. However, I do not think that this treatment can be applied indiscriminately to every case; nor will the removal of diseased tonsils cure every case of chronic deafness any more than it will cure every case of chronic rheumatism.

However, Dr. Emerson has demonstrated most conclusively that without any direct ear treatment, the removal of foci of infection will in many cases restore hearing that had apparently been damaged beyond repair. The society is greatly indebted to Dr. Emerson for presenting this scholarly and timely paper.

Dr. Francis P. Emerson, Boston, Mass.—Dr. Bigelow referred to my rather decrying definite treatment of the ear. I do not wish to take that ground, because treatment of the Eustachian tube is often in order, but what I wanted to over-emphasize was how important it was to try to restore the condition of the conduction apparatus by first getting rid of your infection. In this field, as in every other department of medicine, we need to cooperate with the internist. We must increase the resistance of the host, follow up postoperative infections, study this particular individual's immunity, test them for food, pollen and bacterial reactions, as well as see abnormalities in the nose and infections in the air spaces.

CHANGES IN THE RETINAL VESSELS AND RETINA IN SYSTEMIC DISEASE.*

Thomas A. Woodruff, M. D., C. M., F. A. C. S.
New London, Conn.

Frequently the ophthalmologist is consulted by patients of middle life who have pronounced ocular symptoms, and who on examination show, besides a possible eye strain, which is accountable for many of local symptoms, signs and changes in the background of the eye itself, which are a part of certain morbid conditions of the general system, and can readily be recognized by the ophthalmoscope if a careful and diligent examination is made of the ocular fundus.

*Read before the New London County Medical Society, October, 1920.

The background of the eye is the only region of the body where blood vessels, or more properly speaking, the blood current, can be seen. The vascular walls are so thin that they are practically invisible in the normal state, and it is merely the column of blood as it circulates through its channels that is recognizable. Not until some decided change takes place in the vascular coats are the walls of the blood vessels seen.

The retinal vessels possess no anastamoses, but are terminal vessels, and for this reason the region which depends for its nutrition upon these vessels is liable to show alterations in structure that are a reflection of wide spread vascular degeneration.

The early recognition of these anomalies is important from a clinical stand point. In many instances it is the first indication that vascular degenerative changes are taking place elsewhere, and those seen in the eye are only a part of a morbid process existing in the blood and blood vessels of the brain, heart and kidneys and other portions of the body.

With the ophthalmoscope many a commencing general vascular degeneration can be detected in its incipiency by noting the alterations in retina and retinal circulation. Little importance has been attached by the practitioner of medicine to fundus examinations for the early detection of vascular changes, although the ophthalmologist has for years known that in the background of the eye the first signs of capillary alterations show themselves. A man in apparently good health, exhibiting no symptoms of disease apart from a slight defect in vision, may be the subject of vascular changes of the most serious character. Patients with serious degenerations of this character not uncommonly consult the ophthalmic surgeon, without even suspecting that they are the subjects of a deadly disease which may go on for months, or even years, without setting up symptoms referable to other organs, and consequently without the family physicians being consulted.

The internist should use the ophthalmoscope and familiarize himself with at least the normal appearance of the background of

the eye. Half an hour, now and then, will, after a few months' regular practice, enable any observer to make himself competent to recognize at least the gross changes that sooner or later show themselves in the course of these diseases. Negative evidence is often quite as valuable as positive. Where no signs of capillary alterations are to be found in the retinal arteries, nor changes in the retina itself, the probability is that there are no advancing changes going on in the vessels elsewhere. It is by no means claimed that this is an infallible test, but it is among the most important of the early indications of general disease. When structural changes in this situation are found so slight that a most careful and diligent search is required for their detection, positive conclusions can be formed that these are only a part of a fibrosis more or less extensive in the arteries and capillaries throughout the whole system. (Fig. 1.)

Tortuosity of the retinal vessels, although one of the earliest phenomena, is not in itself a positive sign unless confirmed by the presence of other variations from the normal which are generally to be found in the early stages of arterial degeneration. These are alterations in the calibre of the vessels showing inequalities in the width of the blood column at various points in their course. The localized contractions in some instances amount to almost total disappearance of the capillary, which then regains its normal size; this condition occurring over and over again, giving the vessels a beadlike appearance. At the same time the vascular reflex is broader and brighter, and whitish stripes run along the margin of the vessel wall. In the normal condition the walls of the retinal vessels are

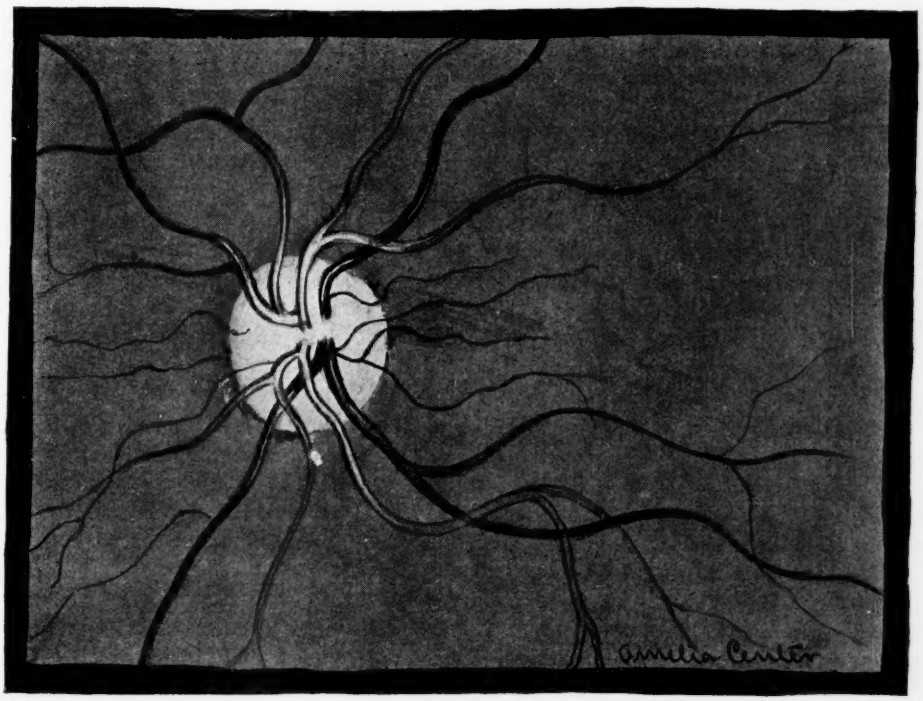

FIG. 1—Representing the normal vascular supply of the retina.

In the earliest stages of vascular degeneration certain changes visible with the ophthalmoscope may be seen in the background of the eye and about the vessels, and when present are conclusive evidence of similar alterations in the vessel walls elsewhere in the body.

not visible with the ophthalmoscope, the width of the column of blood indicating in a general way the diameter of the vessel. But

when the vessel walls become thickened from degenerative changes, there occurs a loss of translucency, in which the arteries lose their power of transmitting light, where a vein is crossed by an artery. The vein becomes obscured at this point and the phenomenon is usually accompanied by an appearance of compression and loss of the light streak in the vein on either side of the point of crossing. In the more advanced stages the vein is practically obliterated from the pressure exerted by the artery, and enlargement of the distal end of the venous current is quite apparent. On the other hand, when the vein crosses the artery it appears to hook over that vessel with less signs of compression of its coat.

Edema of the retina from interference with its nutrition occurs sooner or later and is recognized as a grayish haze, which is better seen in the macular region, or along the course of the vessels.

The relation of vascular disease to various morbid conditions in certain organs of the body is well known. The causes that lead up to these changes in the circulation depend upon the absorption into the blood of the toxins given off under diseased conditions in the general system, which, if not checked, have an effect upon the vascular coats that ultimately results in pathological changes, which sooner or later become permanent and produce degenerations in various organs of the body. They are due to the retention in the system of effete substances which act as poisons, their existence depending upon defective action of the excretory organs.

If such excretory organs as the kidneys and liver act indifferently, there is an accumulation of the toxic matter absorbed into the blood stream which produces morbid changes, not only in the vessels of these organs, but more particularly in the general vascular system. Primary arteriosclerosis depends in a great measure on just such a cause.

Arteriosclerosis, in the true sense of the term, is probably never of primary origin, but is secondary to a degeneation which has already existed for some length of time.

The patients whose retinal vessels show these degenerative changes are generally those who have reached the ages of forty or fifty years, who have led a sedentary life and who are fond of good living. There is, also, a history in most instances of some form of "indigestion" and in many cases there is a distinct history of gout or rheumatism. The heart is frequently hypertrophied from valvular lesions. It is in such cases that the natural functions of the excretory organs are not carried on perfectly. A chronic diffuse nephritis and other conditions involving increased arterial tension may be present. A form of poisoning results from absorption into the blood of the effete matters which are insufficiently eliminated.

Gout, syphilis and alcoholism are associated with and frequently play an important role in the causation of these degenerations. Probably they are, in the majority of instances, the underlying cause of the arterial disease. What effect the poisons have on the blood and the vessel wall is not clearly understood, but the changes cause a high blood pressure from increased resistance to the blood current in the peripheral vessels. This is followed by hypertrophy of the heart, and eventually atheromatous changes in the arteries. As the disease advances in the system and the general arteriosclerosis develops, changes in the retinal vessels may be regarded as merely a part of these vascular alterations that are at the same time taking place elsewhere in the body. These pathological changes may go on for years without giving rise to any untoward symptoms that have an effect upon the patient's ordinary mode of life. It is only when the disease has advanced to the stage in which foci of sclerosis appear in the kidneys, liver and the larger vessels that notice is taken of them, or even a suspicion is entertained that the patient's life is in danger.

There is probably no other disease in which vascular sclerosis plays a more conspicuous part than a typical chronic gout, a disease characterized among other changes by high arterial tension and cardiac hypertrophy. The gouty diathesis predisposes to vascular degeneration of a more or less pronounced type, the presence of which is recognized in retinal changes confined more or less (es-

pecially in the early stages) to certain alterations in the retinal vessels and circulation, though these changes do not differ materially from those which are present in the course of arteriosclerosis, due to other causes. It is well recognized that degeneration of the retinal vessels, and of the retina itself is probably more indicative of chronic gout than any other morbid process. This is probably due to the presence of deleterious matter, which, producing changes in the blood and acting on the coats of the vessels, induces a high arterial tension that is responsible for the alterations in the arterial walls themselves. These same causes bring about sclerotic metamorphoses in the small blood vessels and capillaries. These degenerative changes show themselves in the retina by alterations in the appearance of the blood vessels, which in the early stages, are so slight that they are easily over-looked if a careful examination is not made. (Fig. 2.)

Hemorrhages into the retina not uncommonly occur at some stage of the disease and are the result of a diapedesis or an actual rupture of the vessels from a weakened condition of the vessel wall, probably the result of changes in the composition of the blood and in the coats of the vessels. They are danger signals which serve as suspect notices of the existence of general vascular disease, and a suitable systemic examination should follow.

Hemorrhages may be any size, and vary from a minute point to a large extravasation covering the greater portion of the retina. In number there may be one or many, scattered over the fundus, situated either in the periphery or macular regions alone, or in both situations at the same time, in most cases following the course of the blood vessels, and in many cases covering them. Their shape depends upon the position they occupy in the substance of the retina, being round, oval, or irregular when situated in the outer or

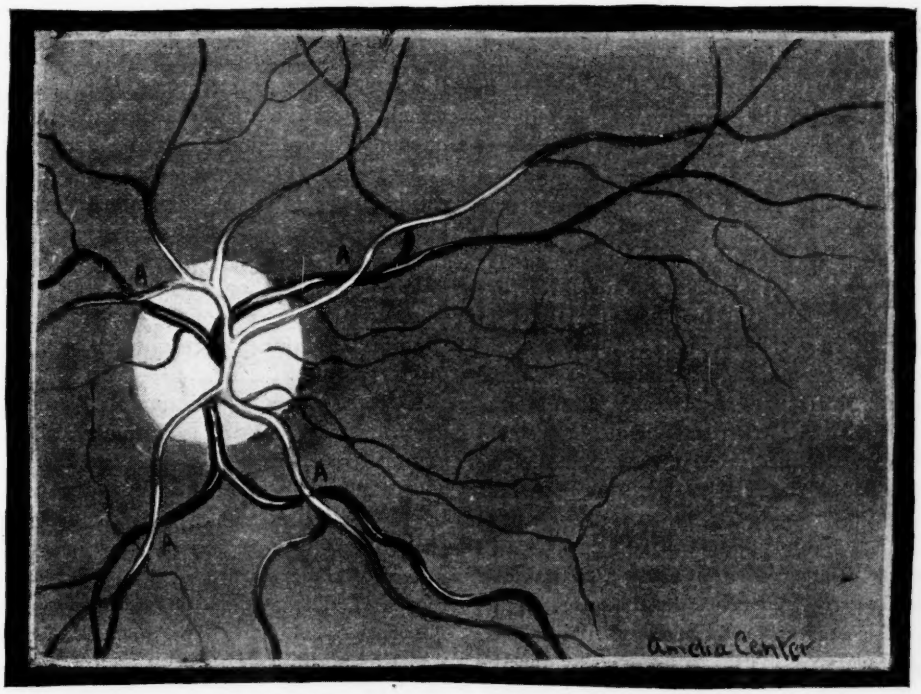

FIG. 2—The vascular changes as seen in arterial degeneration representing the impeded circulation (A) in the veins where crossed by an artery.

inner layers and striated or flame shaped when in the nerve fiber layer of the retina. Sometimes the hemorrhage is situated between the retina and vitreous, usually in the neighborhood of the macular region, and it has a rounded, well defined outline.

Recent bleedings are bright red in color, which in a few cases are absorbed, but more often the bright red color is replaced by the formation of whitish spots of degeneration, which, in time, usually become pigmented, and in many instances, become replaced by masses of dense pigment.

The presence of hemorrhages indicates a weakened condition of the vessel wall from a degeneration of the retinal vessels accompanied by an increase in the arterial pressure, a condition which is likely to exist in case of valvular disease of the heart, in morbid conditions of certain organs of the body, as in chronic Bright's disease, in general blood diseases, such as gout, pernicious anemia, leucocythemia, etc., or in the degenerative changes seen in old age, and which are frequently a forerunner of similar changes existing in the brain, with eventual rupture of a vessel in that organ. Retinal hemorrhages nearly always accompany thrombosis and embolism of the retinal veins and arteries, conditions which frequently depend upon diseases of the heart, kidneys, or blood vessels of the brain, and although occurring more often in elderly people, they are occasionally met with in persons under middle life, and may be the first warning of any disease in these organs.

About fifteen per cent. of all cases of renal and other affections in which albuminous urine is found are uniformaly associated with ocular changes. More or less severe in character from slight alterations in the walls of the retinal vessels to the severer degenerations and inflammations of the retina itself. Edema of the lids, especially a temporary swelling of the lower lids in the morning, is one of the earliest prodromata of albuminuria where anasarca is liable to occur. By far the most important eye manifestations, however, are alterations in the optic nerve and retina. These changes may appear in various forms, the most common being a degenerative form in which the changes are confined to the retina and there is scarcely any alteration in the appearance of the optic nerve head; a hemorrhagic form with many hemorrhages; but slight signs of inflammation; and an inflammatory form in which there is much swelling of the retina and obscuration of the optic nerve head.

All degrees of hyperemia of the optic nerve head, from a simple congestion to a well developed, choked disc, are not uncommon in all forms of Bright's disease. These occur alone or in conjunction with what may be regarded as the characteristic lesion in albuminuria, viz: whitish degenerative patches arranged in stellate fashion about the macula. They are first seen in linear streaks that gradually arrange themselves like the spokes of a wheel around the fovea. Later on, other whitish areas appear in the background and they may coalesce covering the vessels. Associated with these alterations in the retina are eventually seen hemorrhages, usually in and about the optic nerve head.

Retinal changes are met with most frequently in chronic nephritis, especially in the interstiteal or contracted form, a disease which is preceded by and depends for its existence largely upon a chronic endarteritis.

Although slight vascular changes in the retina may antedate the appearance of albumin in the urine, they are only present when there is a distinct disturbance of the kidneys. Such changes are the result of the retention of the poisonous substances which the diseased kidneys are powerless to excrete properly.

In some cases no albumin is found in the urine, or only a trace is found after repeated examination and the specific gravity is low. The hemorrhages are usually situated in the nerve fiber layer and have a streaked or flame shaped appearance. When they occur in the other layers they are oval or round and irregular. These hemorrhages may undergo absorption, leaving pigmented areas or whitish spots of atrophy with pigmented borders. Both eyes are affected, although the changes may take place in one eye sometime before they occur in the other.

Prognosis. The significance of these retinal changes and the influence they exert upon

the life of the individual depend largely upon their cause and the progress of the degeneration in other portions of the body. The degenerative process, which so often has an insidious beginning, may have gone on for some time before any abnormalities in the ocular fundus are noticed. Not until gross lesions have shown themselves in the eye can we positively predict a fatal termination. The mere fact that such conditions exist in the retinal vessels does not warrant us in assuming that the disease is going to progress to such a stage as to affect the function of the kidneys and liver, to cause degenerative changes in the brain.

The course of arterial degeneration is usually slow, although exhibiting periods of exacerbation. The patient's ordinary occupation is very little interfered with. There are ordinarily no symptoms of any moment which point to any altered state of the general health. The patient lives his daily life, unconscious of the existence of these phenomena, until some marked symptoms from the occurrence of actual hemorrhages, thrombosis of the retinal vessels, etc., show themselves, and the clinical aspect of the case becomes decidedly changed. When these vascular alterations are recognized and appropriate treatment is instituted early, the progress of the disease may be arrested and the patient's health remain good.

An unfavorable prognosis depends upon the state of the heart and other organs. When the degeneration has so far advanced that the vascular walls are impregnated with a tissue that is foreign to them; and hemorrhages into the retina have occurred, then an arrest of the progress of the disease cannot be hoped for.

Hemorrhages from retinal vessels and capillaries in persons past middle life, should always be looked upon with suspicion; they indicate some degeneration of the general vascular system.

If occurring in old people in whom the existence of an arteriosclerosis is to be suspected, they point to a possible attack of cerebral apoplexy which will likely prove fatal.

In chronic Bright's disease retinal hemorrhages and changes in the retina itself appear as late manifestations of the disease and point to extensive degeneration in the general circulatory apparatus and kidneys, the prognosis in such cases being more favorable than when such complications do not exist. The average duration of life after the appearance of retinal complications is about two years, in ninety per cent. of the cases.

MISCELLANEOUS

ETHER AND LAVENDER.

Dessertation on Agriculture.

Potatoes.

(Synonyms: "Murphy's," "Spuds.")

This cosmic fruit of the soil is essentially a succulent tuber, has in its native state an earthly smell and appearance and when properly prepared, (especially "pared") may become a gastronomic joy. A satisfactory procedure would be to entirely denude the potato, split into thick, longitudinal slices, these to be again divided parallel to the long axis and dropped into a receptacle containing deep and very hot fat.

When thoroughly cooked they may be served with what the French know as "Bifsteak" and taken in allopathic dosage. This when accomplished is apt to produce a sensation of deep content—a ruddy glow comes to the cheek; a delicious sense of languor pervades the physical and mental system; the very thought of splitting wood is so entirely repugnant after a copious ingestion of this combination, that whole woodpiles have been referred to some place where it would easily burn without splitting.

The culture of the potato is productive of both profit and pleasure; too great assiduousness in its cultivation, however, produces a profound disturbance of the dorsal musculature which simulates a condition known to the ancients as "Backus Breakorum," the fear of which disease probably accounts for the great reluctance evinced by most men of taking up its intensive cultivation.

Although not at first apparent, the potato resembles in some respects many physicians; it is inoffensive, makes no protests against its use or

(*Continued on Page 18*)

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EDITORIALS

THE RHODE ISLAND MEDICAL JOURNAL.

Conscious of the standard of excellence heretofore maintained, the policy of this publication will be but little disturbed. Some slight innovations are meditated in the nature of a query column to which questions may be addressed to the Editor, signed or anonymous, and must reach the Editor's office not later than the 5th of the month preceding the issue of the first succeeding month.

All questions will be referred to an authority indicated by such questions and answered accordingly. Neither the name of the questioner nor the authority will be published. In this column, also will be published any case or clinical material that may be thought of interest, and Fellows of the Society are earnestly requested to report any such to the Editor for publication. Items of personal interest would be most welcome and space will be found to insert items having to do with activities of the physicians of this state, whether it be a visit of the stork, a prank of Cupid, social functions, removals, appointments or any other matter of mutual interest or concern.

If the officers of the various district societies would be willing to assume the congenial task of collecting and reporting these affairs, it would be of interest to their fellows, a help to the JOURNAL, a pleasure to themselves and a most appreciated courtesy to the Editor.

Certain space also will be devoted to medical or other anecdotes and quibs coming under the observation of any contributor who will favor the JOURNAL with such, and published in the hope that it will cheer a leisure moment of some Fellow of the Society who is following the "probe or the dose" too closely for his mental tranquility.

THE MEDICAL LIBRARY BUILDING.

In varied degree most men are self-centered, and it may be that when one's observation is narrowed by some particular walk in life, the impression gains weight that people in this particular walk in life are more self-centered than others, which really means that our mental vision is not always alert to the conditions that surround us. Judgment is therefore, based according to our field of vision and the profession of medicine does not, of itself, broaden the general vista.

Many men make a profession of medicine, more make a business of it; and there are others —but let it pass; we have to do only with the first two and it takes no deep analysis to detect the tendency to slavery of one and unbroken drudgery of the other. And is this all? If so, it is rather a left-handed compliment to our intelligence.

In the physical make-up shall one group of muscles thrive and another perish? It does not seem as if there could be anything more trying than the practice of medicine, whether as a vocation or avocation to one endowed with conscience or humanitarian instincts. We are constantly struggling in an uphill fight with science as an only weapon and that often weak or unrevealed. With all of this to maintain a healthy mental attitude and receptiveness, some diversion is not only essential, but necessary; our work is better, more effective and more cheerfully done.

Untold centuries ago speech grew, and became an agent for the interchange of thought; syntax developed, adding a nicety to expression, and language became an entertainment. Another step; cadence and rhythm came and music was established—all social institutions for the most social of all living things; man. Diversion and sociability are the powerful side partners that relieve the friction in the daily grind; we owe it, therefore, to ourselves and to successful work in these days of stress and bustle to snatch such opportunities as are open before us, but it is feared, the social tendencies in the physician's make-up as far as the Rhode Island Medical Society is concerned do not appear very keenly to respond to opportunities within reach.

We have builded us a building; accessible in location, well equipped, essentially a special library, but not of necessity exclusively so. We hold our Society meetings in it and listen to papers and discussions; we upon occasion lend it to certain organizations engaged in allied work. Some physicians patronize quite extensively the library, but what percentage of the approximately five hundred physicians in Rhode Island make a real use of it? Certain it is that its scientific and literary usage is working no great deterioration to its structure. A building of this pretentiousness, moreover, is entitled to some additional attention.

While the Medical Library building should be more of a scientific center, it should also be made a social center for the physicians of Rhode Island, and should be available for many purposes that the State Society should choose to make it. It is hardly conceivable that the tenets of its charter should be so inelastic as to exclude selected forms of entertainment.

We have many musical men within our ranks, amply qualified to offer a program that without doubt would pack our auditorium to the doors; and if by chance, as the seductive strains were wafted through corridors and halls, some of the hearers should so lack restraint as to indulge in active worship of the god Terpsichore, it should not appear that the law or the grant had been woefully transgressed.

Lectures upon any suitable subject should not only be permitted, but encouraged, even an eve-

ning or two a season of whist should not be particularly taboo.

And further, while it is clearly understood the District Nursing Association is in no sense affiliated with the Rhode Island Medical Socety, we cannot overlook certain conditions wherein they course in parallel lines. These capable women, responding any hour in the twenty-four to calls, for pay or without, willingly and without quibble, are a mental splint to those in pain and a help and comfort to the physician. It would be not only a graceful tribute to their attitude and help, but also an entirely appropriate procedure if our building could be made available to their organization, either for business or pleasure, should occasion arise.

SOCIETY MEETINGS

RHODE ISLAND MEDICAL SOCIETY.
COUNCIL.

November 29, 1920.

The Council met this date, Dr. Mowry presiding. There were present Drs. Mowry, Chesebro, Day, Gordon, Mathews, Welsh, White, Hoye and Leech.

The Treasurer's Budget was presented by Dr. H. J. Hoye and it was voted to recommend to the House of Delegates the adoption of the same

BUDGET, 1921.

Expenses, Secretary and Treasurer	$ 150 00
Interest	144 00
Librarian	1200 00
Janitor	396 00
Gas and electricity	100 00
Fuel	550 00
*Collation	550 00
Books and binding	75 00
Repairs and supplies	250 00
Insurance	15 00
Safe Deposit	6 00
City water	15 00
Telephone	75 00
Incidentals and unforeseen liabilities	300 00
Rhode Island Medical Journal	400 00
	$4226 00

*If annual dinner is given.

The Treasurer read a list of members who are in arrears for dues and will be dropped December 15 unless the back dues are paid.

Dr. William R. White presented the following resolution:

Resolved, That Dr. Jesse E. Mowry, Dr. John M. Peters, Dr. Charles H. Leonard, and Dr. George S. Mathews be made a Committee, and that the same be empowered and directed, in behalf of the Rhode Island Medical Society—First, to procure and place in the interior of the Medical Library Building a suitable tablet in honor and memory of Dr. George Dallas Hersey, and his work in upbuilding the Library and promoting its interests;—Second, to obtain a photograph of Dr. Hersey, have it enlarged, framed and hung within the Library Building.

Resolved, That sufficient funds for the execution of these measures be appropriated from the treasury of the Society.

It was voted to recommend to the House of Delegates the adoption of the foregoing resolution.

Adjourned.

J. W. LEECH, M. D., *Secretary.*
November 29, 1920.

HOUSE OF DELEGATES.

The House of Delegates met this day, Dr. J. E. Mowry presiding. The Treasurer's Budget was presented as recommended by the Council and adopted.

BUDGET, 1921

Expenses, Secretary and Treasurer	$ 150 00
Interest	144 00
Librarian	1200 00
Janitor	396 00
Gas and electricity	100 00
Fuel	550 00
*Collation	550 00
Books and binding	75 00
Repairs and supplies	250 00
Insurance	15 00
Safe Deposit	6 00
City water	15 00
Telephone	75 00
Incidentals and unforeseen liabilities	300 00
Rhode Island Medical Journal	400 00
	$4226 00

*If annual dinner is given.

On motion of Dr. Hammond, seconded by Dr. Phillips, the following resolution, as recommended by the Council, was adopted:

Resolved, That Dr. Jesse E. Mowry, Dr. John M. Peters, Dr. Charles H. Leonard, and Dr. George S. Mathews be made a Committee, and that the same be empowered and directed in behalf of the Rhode Island Medical Society—First, to procure and place in the interior of the Medical Library Building a suitable tablet in honor and memory of Dr. George Dallas Hersey, and his work in upbuilding the Library and promoting its interests; Second, to obtain a photograph of Dr. Hersey, have it enlarged, framed and hung within the Library Building.

Resolved also, That sufficient funds for the execution of these measures be appropriated from the treasury of the Society.

It was voted that the annual dues for the year 1921, be fixed at $10.

The report of the Chairman of the Committee on Necrology, Dr. Charles H. Leonard, was received and placed on file:

"To the House of Delegates, Rhode Island Medical Society:

"As Chairman of the Committee on Necrology, I beg to report that I have forwarded to the Editor of the RHODE ISLAND MEDICAL JOURNAL obituary notes, prepared by the Committee concerning the deaths that have occurred in the Society since December 1, 1917, namely, for one Honorary member, sixteen Fellows, one non-resident member, and four past Fellows.

"The list is a long one, for the last list published was that in the December number of the JOURNAL in 1917.

"Personally, I may express the hope that opportunity may be found for publishing a Historical Catalogue of the Society, on which much labor has been expended, both by the late Dr. Hersey and myself.

"Respectfully submitted,
"CHARLES H. LEONARD, *Chairman,*
"Necrology Committee."

A communication from the Committee on Public Health Problems, A. M. A., requesting the appointment of a committee from this Society, to co-operate with a committee from the State-Teachers' Association, for the purpose of promoting better health conditions in public schools, was read by the Secretary. It was voted that the President be empowered to appoint such a committee.

Adjourned.

J. W. LEECH, *Secretary.*

QUARTERLY MEETING.
LIBRARY BUILDING.
December 2, 1920.

The regular quarterly meeting of the Rhode Island Medical Society was held in the Medical Library, December 2, 1920, at 4 p. m. The President, Dr. J. E. Mowry, presided. There were present 65 members. The minutes of the September meeting of the Society, of the last meeting of the Council, and of the House of Delegates were read by the Secretary.

The President made the following appointments:

DELEGATES TO STATE SOCIETIES.

Maine—Dr. C. R. Doten, Dr. C. S. Christie.

New Hampshire—Dr. H. B. Sanborn, Dr. A. H. Ruggles.

Vermont—Dr. W. R. White, Dr. J. C. Rutherford.

Massachusetts—Dr. C. W. Skelton, Dr. W. G. Sullivan.

Connecticut—Dr. I. S. Cook, Dr. G. F. Johnson.

Anniversary Chairman—Dr. Frank E. Peckham.

Member at Large of the Board of Trustees of the Rhode Island Medical Society—Dr. Benj. F. Tefft.

Dr. A. H. Miller presented the following resolution:

"Resolved, That the Rhode Island Medical Society favors the establishment by the American Medical Association of a section on Anesthesia and recommends that its House of Delegates instruct its representative to the House of Delegates of the American Medical Association, which is to meet in Boston, in June, 1921, to act in accordance with this view."

The foregoing resolution was adopted and referred to its House of Delegates for final action.

The first paper was presented by Dr. W. Russell MacAusland, Boston, on "Infectious Ar-

thritis; Prevention of Deformities." The paper was illustrated by lantern slides. Discussion was opened by Dr. W. E. Preble, Boston.

The second paper of the afternoon was presented by Dr. Frank E. Peckham, Providence, "The Spinal Mechanism in a Dual Role."

"1. A Key to Diagnosis and Treatment.

"2. A Cause of Symptoms."

The paper was based entirely on studies connected with Chronic Arthritis.

After adjournment, a collation was served.

J. W. LEECH, M. D., *Secretary.*

WOONSOCKET DISTRICT SOCIETY.

The Woonsocket District Medical Society met December 2, 1920, at 4:30 p. m., at the office of Dr. C. B. Barry.

Important issues were considered at the meeting.

THOMAS F. BAXTER, M. D., *Secretary.*

HOSPITALS

RHODE ISLAND HOSPITAL.

The annual meeting of the Rhode Island Hospital Staff Association was held December 6, 1920, at 12 m., in the chapel of the Hospital.

Dr. N. Darrell Harvey was re-elected President of the Association and Dr. Norman C. Baker was re-elected Secretary.

Members of the Staff chose terms of service for the ensuing year, and reports of various committees were received and accepted.

NORMAN C. BAKER, M. D., *Secretary.*

ST. JOSEPH'S HOSPITAL.

The Staff of St. Joseph's Hospital held a Staff Conference, December 10, 1920, at 8:45 p. m., in the Out-Patient Building.

GEORGE F. JOHNSON, M. D., *Secretary.*

MEMORIAL HOSPITAL.

The regular monthly meeting of the Staff Association was held December 2, 1920, at 9 p. m. Reports of the clinical work done in the various departments during the past month were presented and discussed.

The adjourned annual meeting of the Corporation was held at the Hospital, December 8, 1920, at 12 m. Reports of the officers were read and officers of the Corporation were elected. After the meeting a luncheon was served.

(*Concluded from page 13*)

abuse, is absolutely neutral in all public and private questions regarding its individual welfare and final disposition, and is subject to dry rot.—A friend to obesity and a bane to scurvy, and in the last two or three years particularly, has proven to be an appreciated friend and fireside companion.

HISTORICAL NOTE.

The potato was first introduced into England in the 16th Century by a man by the name of Walter Riley, or some such name, (Sein Fein affiliations not proven). He was a great friend of a certain Elizabeth Tudor, who had the job of bossing England for a time. It seems that when she was walking one day, and coming to a puddle, was unable to cross, this man, Riley (or some such name) let her walk across on his clothes, although history is somewhat vague as to whether he was in 'em at the time. He was a soldier by reputation, a social favorite by fate and was the only man in three counties that owned a tooth-brush or had taken the Keeley cure. He must have been afflicted with exophthalmos, however, as he subsequently underwent a radical operation for thyroid, which was so complete as to necessitate the removal of everything above the clavicle. This so abbreviated his stature that he probably failed to pass the draft, as we hear nothing of his military activities afterward.

Riley (or some such name) at the same time brought to England a dried weed called Tubbacker, which is still used somewhat generally by a certain low persons, the process being to burn the stuff in a receptacle fitted with a reed or stem which is placed in the mouth and the smoke subjected to a series of aborted inhalations.

"Mrs. Casey," said the doctor, "I see your husband is pretty sick; now at 2 o'clock you give him as much of this powder as will lay on a dime. I will see him again to-night."

(Same day, 6 p. m.) "I am concerned about Patrick, Mrs. Casey, did you give that powder as I directed?" "I did, sor, but I didn't have a dime, so I gave him enough to cover two foives."

"Miranda," said Mrs. Newly-Wed, "that hash that you served to-day was very nice. How did you make it?" "Make it, Chile? Hash isn't made, Honey, it accumulates."